Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim1 (currently amended): A plant or yeast eukaryotic cell that comprises a prokaryotic recombinase polypeptide or a nucleic acid that encodes the prokaryotic recombinase, wherein the recombinase is capable of mediating site-specific recombination in the eukaryotic cell between an *attB* recombination site and an *attP* recombination site to form an *attL* and an *attR* site; and wherein the recombinase is not capable of mediating in the eukaryotic cell recombination between the *attL* site and the *attR* site, wherein the recombinase is a bacteriophage ΦC31 integrase**; and only one *attP* or only one *attB* recombination site of bacteriophage ΦC31 integrase integrated in its genome**.

Claims 2 to 5 (canceled).

Claim 6 (previously presented): The eukaryotic cell of claim 1, wherein the cell comprises a nucleic acid that comprises a coding sequence for the recombinase polypeptide, which coding sequence is operably linked to a promoter that mediates expression of the recombinase-encoding polynucleotide in the eukaryotic cell.

Claim 7 (original): The eukaryotic cell of claim 6, wherein the nucleic acid further comprises a selectable marker.

Claim 8 (original): The eukaryotic cell of claim 6, wherein the promoter is an inducible or a repressible promoter.

Claim 9 (canceled).

Claim 10 (previously presented): The eukaryotic cell of claim 1, wherein the cell is a yeast cell.

Claim 11 (previously presented): The eukaryotic cell of claim 1, wherein the eukaryotic cell is a plant cell.

Claims 12 to 35. (canceled).

Claim 36 (currently amended): A plant or yeast eukaryotic cell that comprises:

an *attP* or *attB* recombination site of bacteriophage ΦC31 integrase integrated in its genome; and

a non-genomic nucleic acid comprising a heterologous nucleic acid or a transgene, and ~~an~~ **only one** *attP* site **of bacteriophage ΦC31 integrase** if the cell has the genomic *attB* site or **only one** ~~an~~ *attB* site **of bacteriophage ΦC31 integrase** if the cell has the genomic *attP* site; wherein the eukaryotic cell further comprises a ΦC31 integrase polypeptide.

Claim 37 (previously presented). The eukaryotic cell of claim 36, wherein the non-genomic nucleic acid comprises the transgene.

Claims 38 to 42 (canceled).

Claim 43 (previously presented): The eukaryotic cell of claim 36, wherein the eukaryotic cell comprises a nucleic acid that comprises a polynucleotide that encodes the ΦC31 integrase polypeptide.

Claim 44 (original). The eukaryotic cell of claim 43, wherein the nucleic acid further comprises a selectable marker.

Claim 45 (previously presented): The eukaryotic cell of claim 43, wherein the nucleic acid further comprises an inducible promoter which controls expression of the ΦC31 integrase-encoding polynucleotide in the cell.

Claim 46 (canceled).

Claim 47 (previously presented): The eukaryotic cell of claim 36, wherein the plant is a dicot or a monocot.

Claims 48 to 51 (canceled).

Claim 52 (currently amended): A eucaryotic somatic cell in culture comprising:

a prokaryotic recombinase polypeptide or a nucleic acid that encodes the prokaryotic recombinase, wherein the recombinase is capable of mediating site-specific recombination in the eukaryotic cell between an *attB* recombination site and an *attP* recombination site to form an *attL* and an *attR* site, and is not capable of mediating in the eukaryotic cell recombination between the *attL* site and the *attR* site;

the *attP* or *attB* recombination site integrated in its genome;

a non-genomic nucleic acid comprising a transgene or a heterologous nucleic acid and ~~an~~ **only one** *attP* site if the cell has the genomic *attB* site or **only one** ~~an~~ *attP* site if the cell has the genomic *attB* site;

wherein the recombinase is a bacteriophage ΦC31 integrase **and the attP and attB sites are bacteriophage ΦC31 integrase recombination sites**.

Claims 53 to 60 (canceled).

Claim 61 (currently amended): A method for obtaining site-specific recombination in a eukaryotic cell, the method comprising:

providing a eukaryotic cell that comprises an *attB* recombination site ~~and~~ **or** an *attP* recombination site **of bacteriophage ΦC31 integrase integrated in its genome and a non-genomic nucleic acid comprising a transgene or a heterologous nucleic acid and only one *attP* site if the cell has the genomic *attB* site or only one *attP* site if the cell has the genomic *attB* site**;

contacting the *attB* and the *attP* recombination sites with a prokaryotic recombinase polypeptide, resulting in recombination between the recombination sites, thereby forming an *attR* and an *attL* recombination site;

wherein the recombinase polypeptide can mediate site-specific recombination between the *attB* and *attP* recombination sites, but cannot mediate recombination between the *attR* and *attL* recombination sites;

wherein the recombinase is-a bacteriophage ΦC31 integrase,

Claim 62 (previously presented) The method of claim 61, wherein the eukaryotic cell is selected from the group consisting of a yeast cell, a fungal cell, a plant cell, an insect cell and an animal cell.

Claims 63 to 64 (canceled).

Claim 65 (currently amended): The method **~~of claim 61~~ for obtaining site-specific recombination in a eukaryotic cell, the method comprising:**

providing a eukaryotic cell that comprises an *attB* recombination site and an *attP* recombination site of bacteriophage ΦC31 integrase, wherein the *attB* recombination site and the *attP* recombination site are present on a single nucleic acid molecule;

contacting the *attB* and the *attP* recombination sites with a prokaryotic recombinase polypeptide, resulting in recombination between the recombination sites, thereby forming an *attR* and an *attL* recombination site;

wherein the recombinase polypeptide can mediate site-specific recombination between the *attB* and *attP* recombination sites, but cannot mediate recombination between the *attR* and *attL* recombination sites; and

wherein the recombinase is-a bacteriophage ΦC31 integrase.

Claim 66 (previously presented): The method of claim 65, wherein the *attB* recombination site and the *attP* recombination site are in a direct orientation **and the recombination results in excision of the portion of the nucleic acid molecule that lies between the *attB* and *attP* recombination sites**.

Claim 67 (canceled)

Claim 68 (currently amended): The method of claim 65, wherein the *attB* recombination site and the *attP* recombination site are in an inverted orientation **and the recombination results in inversion of the portion of the nucleic acid molecule that lies between the *attB* and *attP* recombination sites.**

Claim 69 (canceled).

Claim 70 (previously presented): The method of claim 61, wherein the eukaryotic cell comprises a polynucleotide that encodes the recombinase polypeptide.

Claim 71 (new). A plant regenerated from a plant eucaryotic cell of claim 36.